

PRODUCT: Top Drive

DATE: August 26, 2009

SUBJECT: Water Ingress to the TD Flex I/O and (if applicable) Torque Guide J-Boxes

SERIAL NUMBERS: 016, 018-024, 026-027, 029, 031, 034-035, 038, 040-041, 043-049, 054, 059, 062-063, 068, 070, 073-074, 077-079, 081-083, 086, 090, 099, 105-106, 108-109, 110-111, 113-117, 120-121, 123-125, 127-134, 138, 140, 142-152, 154-445, 447-499, 501-694, 696-746, 748-761

DISCUSSION: The J-Boxes on the Top Drive and the Torque Guide may be susceptible to water leaks due to faulty or incorrectly installed hole plugs, hinge screws, seal rings, glands, CGBs, breathers, gaskets, strain reliefs. Routine inspection and proper maintenance should always be performed to ensure electrical components are properly sealed from the weather.

RECOMMENDATIONS: Inspect and repair J-Boxes to minimize water leaks.

- PROCEDURES:**
1. All power must be turned off to any of the J-Boxes being inspected. Performing recommended tasks 1-8 will take approximately one hour per J-Box. Canrig recommends performing inspection during rig move or flat time.
 2. Inspect for water ingress on all NEMA 4X J-Boxes on the Torque guide and Top Drive.
 3. If water ingress is noticed, proceed with the rest of the recommendations on this document.
 4. Inspect all hole-plugs to make sure that they are properly installed. Hole-plugs should be installed center point of hole on j-box to center point of hole-plug. If more than 1/4" deviation is noticed from center, re-install hole-plug to match center. See Figure 1 for a proper hole-plug installation and a improper hole-plug installation.

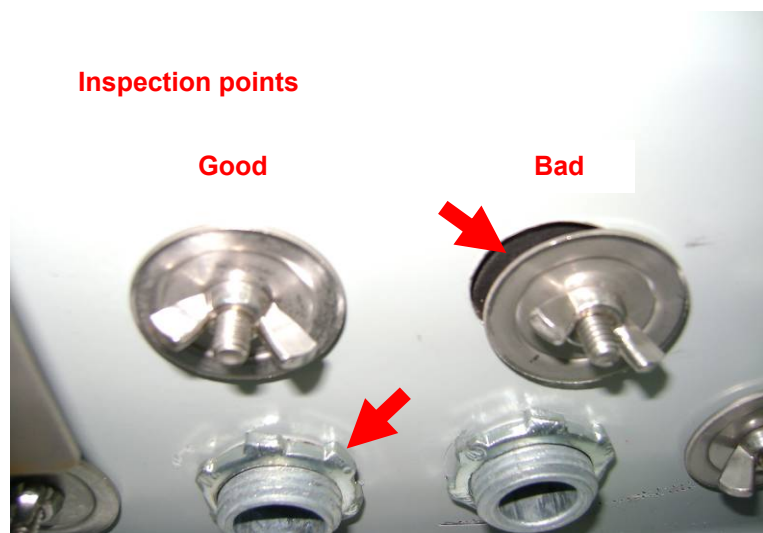


Figure 1

5. Canrig has created a water repair sealing kit, P/N AY15762 to maximize sealing of the junction boxes. Please contact Canrig to order the water sealing kit, should it be deemed necessary. The water repair sealing kit includes the following:
 - 1 Each Gasket, PLC J-Box
 - 1 Each Kit, Enclosure Repair, J-Box, Headwear
 - 8 Each Washer, Rubber
 - 16 Feet Seal, Edge Grip, Adjustable, (rubber gasket)
6. Inspect hinge screws on TD J-Box PLC, to verify that #10 rubber seal washers are installed on the inside and screws are tightened. If no rubber washer, Add a rubber washer in the inside of J-Box (included in repair kit AY15762). A stainless steel washer or nylon washer should be installed on the outside of J-Box.

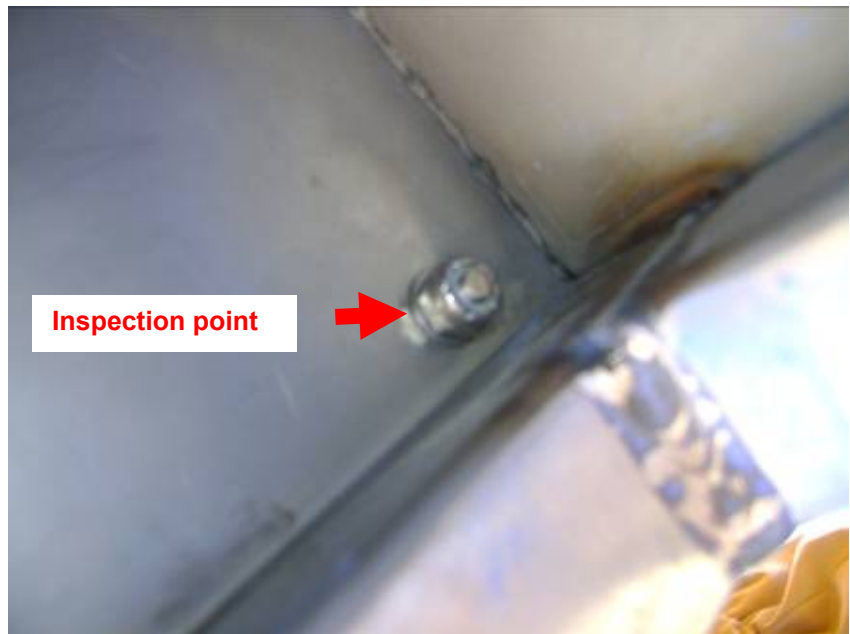


Figure 2

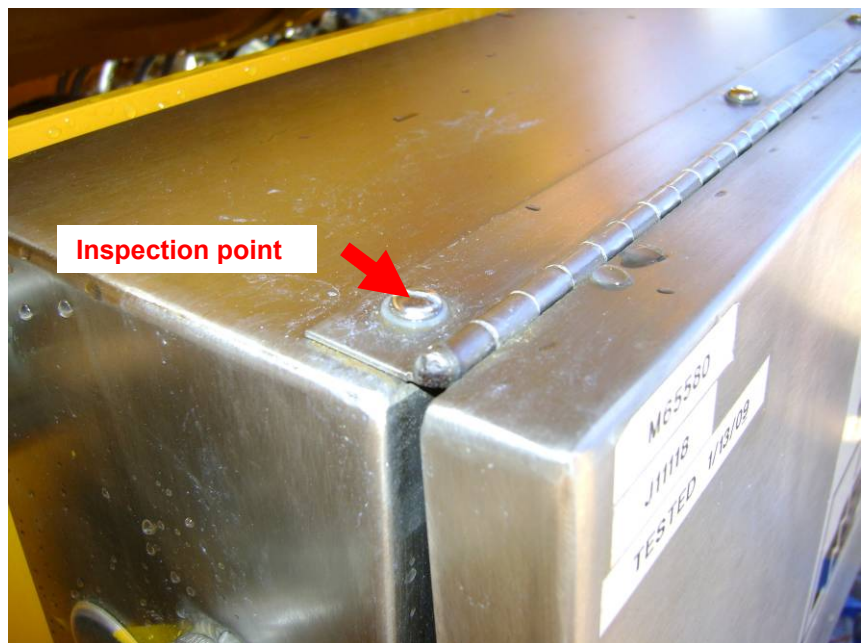


Figure 3

- Carefully inspect the following for proper installation: seal rings on all glands, CGB, breather, door gasket, and other cable strain reliefs.

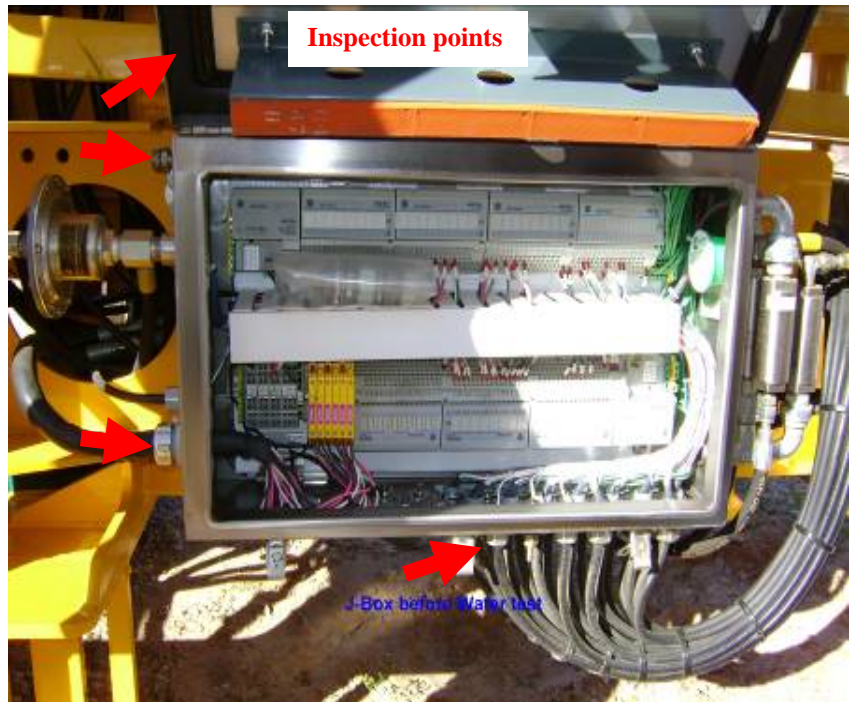


Figure 4

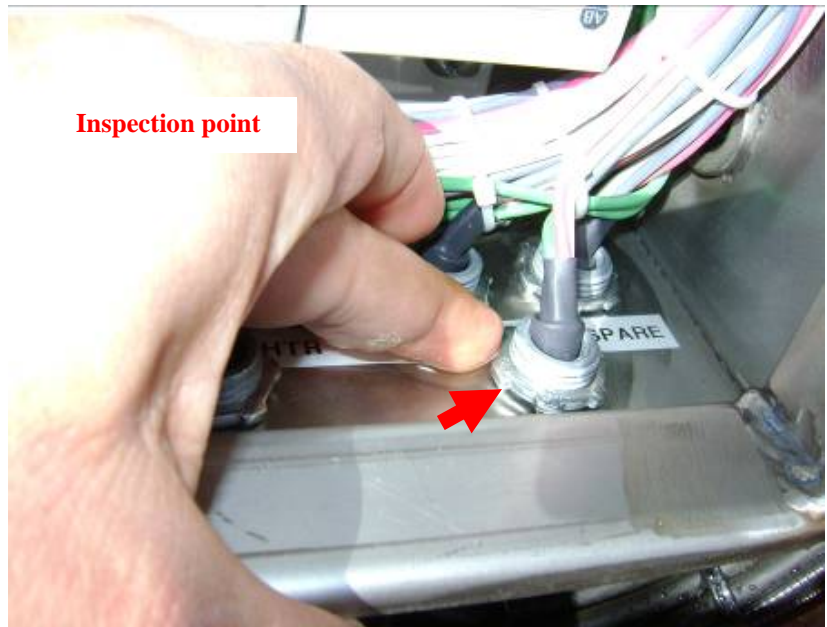


Figure 5

8. Inspect Torque guide J-Box (if applicable) to verify that rubber gasket is installed all around the lip of J-Box opening. If no rubber gasket installed, then install rubber gasket all around the lip opening of J-Box (included in repair kit AY15762).

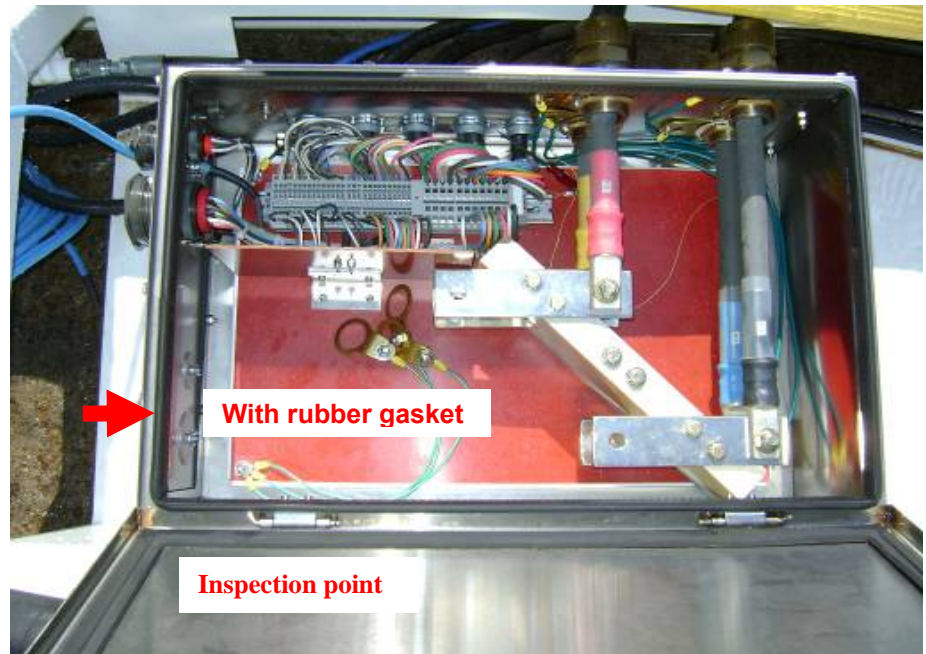


Figure 6

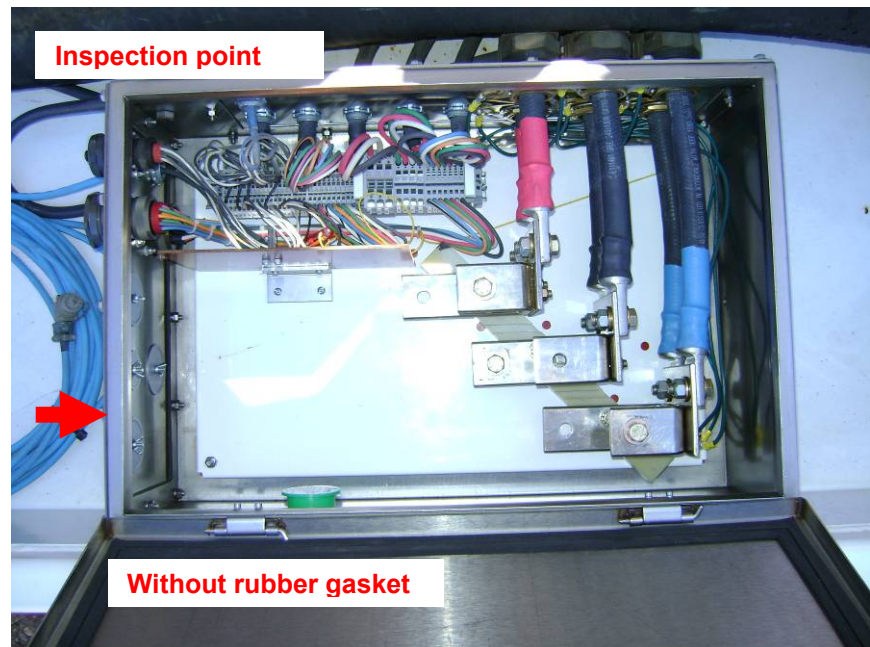


Figure 7

- Install edge guard
- Cut around hinge only on one side for clearance of hinge (see Figure 8)

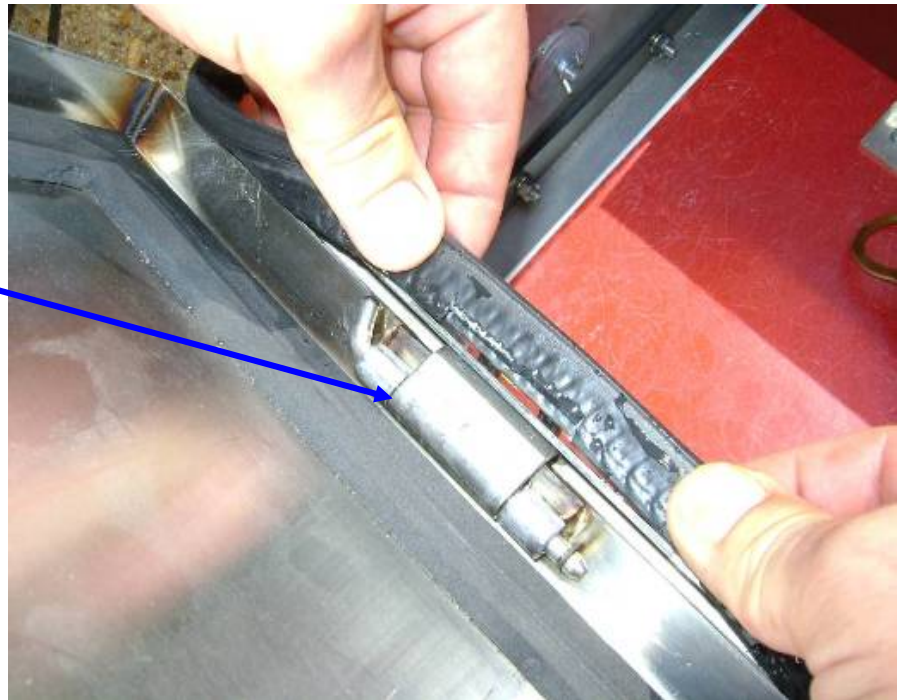


Figure 8

- Super glue both ends creating a seal joint (see Figure 9)
- Wait 5-7 minutes before properly closing door.



Figure 9

9. Verify that work performed to J-Boxes in making them water tight has been successful, by conducting a water test as follows:
 1. Make sure door is properly closed and latched before performing a water test.
 2. Using $\frac{3}{4}$ " garden hose, and standing at an approx distance of 3ft.
 3. Open non-pressurized garden hose and direct the water stream from all angles at the J-Box, simulating rain for a minimal time frame of 15 minutes.
 4. Open J-Box and verify that no more water ingress has occurred.
 5. If water ingress does occur continue with inspection/repair until water leak source has been found and fixed.
 6. For aid in finding water leak use a small amount of blue or red chalk line powder.
 7. Evenly spread the chalk line powder through out the wall of J-Box that are suspected of water leaks.
 8. Performing steps 1-4 the source of leak will easily be detected by the change in chalk line powder color from light to a darker color.



Figure 10

10. On later model Top Drives the J-Box are equipped with Gland Plates (see Figures 11 & 13); Canrig recommends the purchase of a Plug Gland Plate Kit. This kit will substantially improve the Torque Guide J-Box (if applicable) in the following ways:
 1. Reduce Rig-up and Rig-down Time
 2. Eliminate the need of opening the Torque Guide J-Box.
 3. Prevent water from leaking into J-box during pressure washing.
 4. Reduce the amount of time required to connect motor leads and insuring proper connection.
11. Not all lower torque guide J-Box are built or wired the same. It is very important when calling Canrig Service to provide the following information to correctly identify the Plug Gland Plate kit.
 1. Top Drive Serial number
 2. Verify that the lower torque guide J-Box does have a gland plate that is bolted to the J-Box (see Figure 13): **YES** or **NO**

12. Not all Plug Gland Plate kits are the same. Therefore the following kit shown in this document will capture the principle that will encompass almost all lower torque guide J-Boxes. This only an example Plug Gland Plate kit, it is not specific to any Lower Torque Guide J-Box.

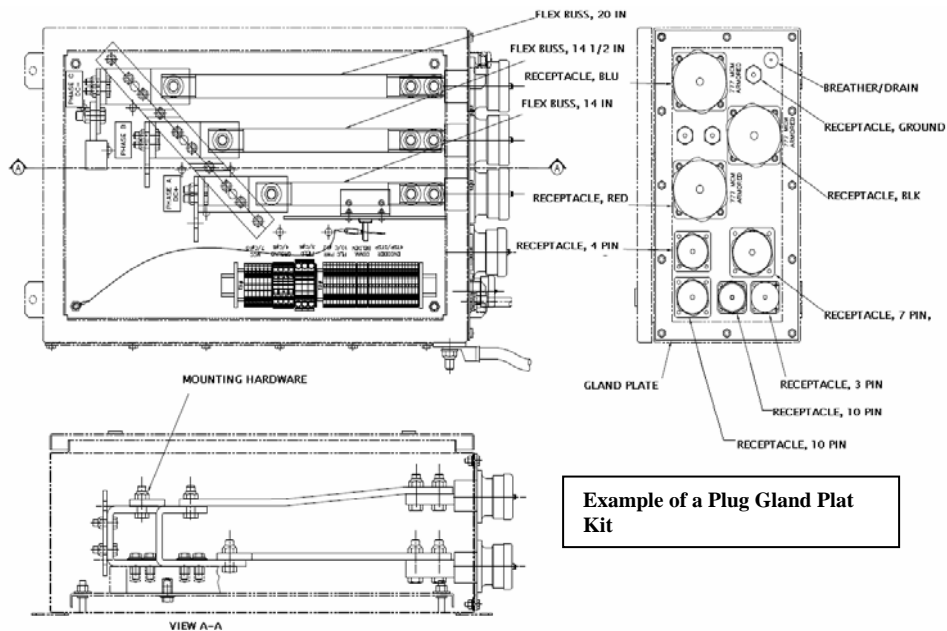


Figure 11



Figure 12

Recommended Plug Gland Plate Kit.



Lower Torque Guide J-Box assembled with the Plug Gland Plate Kit

Figure 13

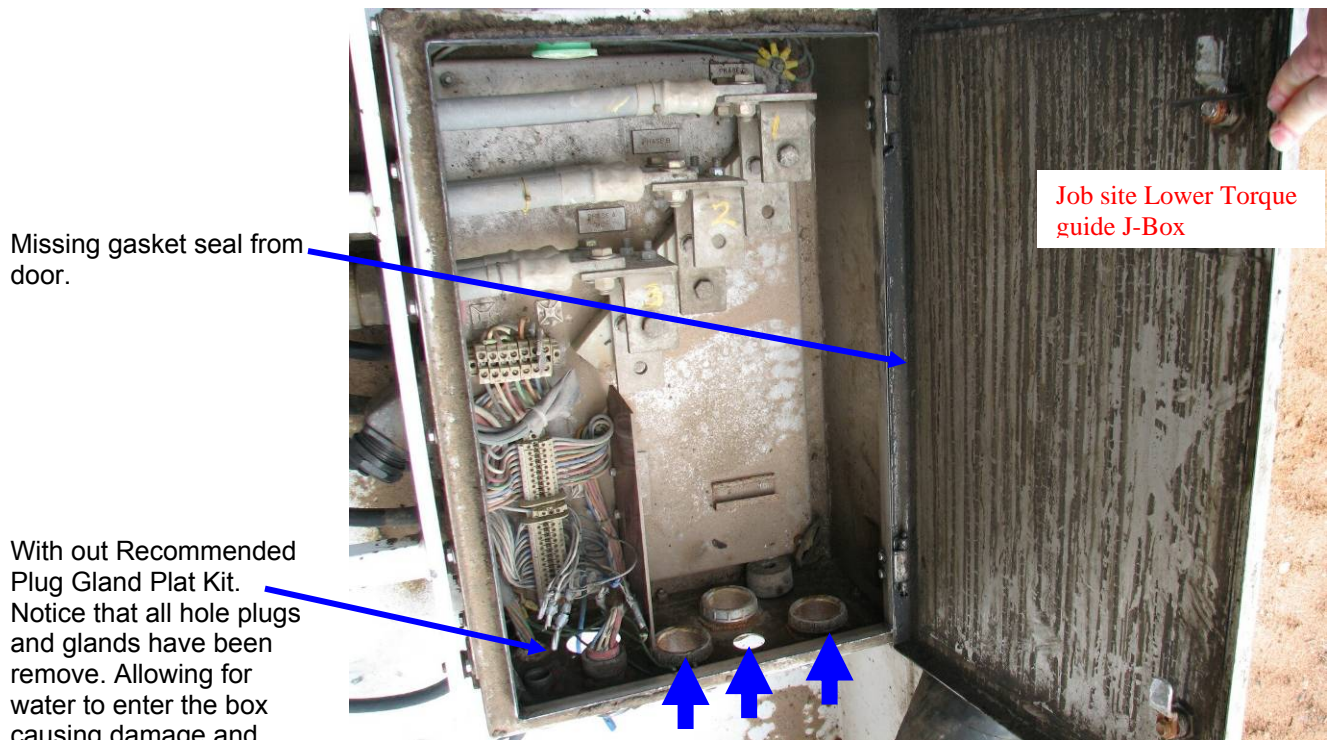


Figure 14

13. Canrig recommends that the installation of the Plug Gland Plate Kit be done by a Canrig Technician or a qualified master electrician. Performing recommended tasks 10-15 will take approximately one day per J-Box. Canrig recommends performing inspection and installation during rig move.
14. Special tools will be required to perform this installation (see Figure 14-15).
 - Wire crimping tool for various gauges (Figure 14).
 - Cable crimping tool gauges 4/O to MCM 777 (Figure 15).
 - Ferrule crimping tool various gauges (Figure 14).
 - Pin inserting tool (Figure 14).



Figure 15



Missing gasket seal from door.

Job site Lower Torque guide J-Box

With out Recommended Plug Gland Plat Kit. Notice that all hole plugs and glands have been remove. Allowing for water to enter the box causing damage and malfunction.

Figure 16

15. The Canrig recommended Plug Gland Plate Kit will minimize further damage of the lower torque guide J-Box as evident in Figure 16.

INFORMATION:

For further information contact:

For a complete list of all bulletins go to www.canrig.com

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